

SOUTH DAKOTA STATE COLLEGE
Bulletin



The Coughlin Memorial Campanile

1944 Summer Quarter
First Term -:- June 12 to July 22
Second Term July 24 to Aug. 31

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1944 Summer Quarter

SOUTH DAKOTA STATE COLLEGE

of Agriculture and Mechanic Arts

BULLETIN

SUMMER QUARTER CALENDAR

First Term

June 12, Monday	Registration Day
June 13, Tuesday	Class work begins at 8:00 a.m.
June 14, Wednesday	Assembly students and faculty Freshman Assembly 1:00 p.m. General Assembly 2:00 p.m.
July 22, Saturday	Graduation Exercises 10:30 a.m. First Term closes at 4:00 p.m.

Second Term

July 24, Monday	Registration Day
July 25, Tuesday	Class work begins at 8:00 a.m.
August 31, Thursday	Second Term closes at 4:00 p.m.

Vol. XXXVI

March, 1944

No. 3

Published Quarterly by the South Dakota State College, Brookings, South Dakota, Entered as second class matter August 10, 1908, at the post office at Brookings, South Dakota, under Act of July 16, 1904

General Information

State College is offering its 1944 Summer Session program with the firm conviction that education can make a major contribution to the welfare of the State and the Nation. Men and women prominent in national affairs are insisting that only by continuing such training as the schools and colleges are able to give can this Nation be assured of retaining its high position of leadership in the post-war world. The demand for trained men and women continues unabated and there is every evidence that the need will increase rather than diminish. Under the circumstances there seems to be little doubt that high school graduates of unusual ability can contribute more to the "American way of life" by continuing their education than by engaging in almost any other kind of activity.

In planning the program of courses every effort was made to anticipate the needs of students whose major objective will be that of preparing for the opportunities and responsibilities lying ahead. The two six weeks sessions of the Summer School will provide training opportunities in all of the five divisions of the College, namely; Home Economics, General Science, Engineering, Pharmacy, and Agriculture. Students wishing to study courses not listed in this catalog should write to the deans of the particular division to determine whether special provisions for studying these subjects might not be made.

The faculty for the summer terms will be composed almost entirely of members of the regular college staff. The courses offered are intended to accommodate the following groups of students: high school students who have completed their junior year and who have been recommended for college work by their school officials, graduates of high schools just ready to begin their college work; the college students who have been in attendance during the current year,

and, graduate students and teachers who wish to take advanced work.

Monday, June 12, is Registration Day for the first term. Students should register on that day and be ready to start classes on Tuesday morning. Students should plan to arrive in Brookings in time to arrange for living quarters before school opens. All administrative offices will be open the preceding Saturday until mid-afternoon.

Admission

The requirements for admission to the Summer Quarter are the same as for other quarters of the year. Satisfaction of entrance credits means the completion of a standard high school course. A candidate for entrance to the freshman class of the Junior College must present at least 15* units of entrance credit by certification or examination, or present at least 12 units of entrance credit together with a recommendation for college work as a special freshman from his superintendent or principal. Others may be admitted as special students to courses they are qualified to pursue. Credit toward a degree will be given only to students who satisfy the entrance requirements. All students entering the College for the first time must submit an application for admission on the official forms and take the entrance examinations for use in guidance and counseling with the students. The examinations are given after classes start and entrance is not based on these examinations. Students entering direct from high school should have their superintendent or principal send a high school transcript directly to the Registrar's office before registering.

* Students who present 14 units may be admitted as conditioned freshmen but must earn the additional unit before the close of their first year in college.

Graduate Work

A number of the departments of the College will offer courses which may be applied toward graduate credit in the respective fields. Courses carrying a number between 100-200 are designated as senior college and graduate courses, while those with numbers above 200 are strictly graduate courses. Those interested in graduate work are urged to write to the Chairman of the Graduate Committee for regulations concerning graduate study. Students who are interested in carrying graduate work but who do not find suitable graduate courses listed should write to the head of the department concerned in order to determine whether or not special arrangements might be made.

This year, for the first time, the Department of Education is offering a Master of Science degree in Education without requiring the usual thesis. Under the new arrangement, known as "Plan B," the student will be required to work out a smaller research project (equivalent to three or four credits) or several practical problems within his own school situation in lieu of the thesis. This plan has been, for a number of years, in operation in a considerable number of colleges and universities offering the masters degree in education. It is not intended to replace the customary research degree but is made available to those teachers and administrators who might find it more suitable for their particular purposes.

Teacher Training Program

Although there is a teacher-shortage in all high school subject-matter areas the shortage seems to be particularly acute in the fields of science, mathematics, and in the specialized fields generally. Assuming that under these circumstances it will be necessary for certain teachers in certain schools to change from one teaching assignment to another, State College is organizing its schedule to provide opportunities for teachers, who are otherwise qualified, to become reasonably effective teachers in the

"critical" fields in one summer quarter.

While it is highly desirable that teachers who wish to take summer work to prepare for teaching in these subjects should have had some previous training in these areas, it is not absolutely essential that they have an extensive college background. Assuming that a teacher has had high school algebra and plane geometry and a reasonable aptitude for mathematics, this individual can acquire enough credits in mathematics in one summer quarter to meet the North Central Association requirements. The North Central Association requirements for teachers of physics, chemistry, or biology, can be met by any high school teacher in one summer quarter provided that teacher has had at least one three credit course in any subject that may be classified as a science. Persons who are interested in teaching commercial subjects can accumulate from 18 to 20 credits in this field.

The demand for high school teachers of home economics is as great and possibly greater than that in any of the above mentioned fields and teachers who wish to extend their training in this subject will find excellent opportunity to do so.

A reasonably large selection of professional education courses for high school teachers and administrators will also be offered. Courses other than those listed may be made available if there is a sufficiently large demand.

Commercial, Printing, and Journalism

Girls who wish to improve their background for office employment will find an excellent opportunity to do so by enrolling in the "speeded-up" programs in shorthand, typewriting, and office practice.

The man-power shortage in the fields of printing and journalism has prompted the College to organize special intensified courses in the technical phases of printing and newspaper publication. By concentrating on restricted areas of work a student may learn to operate the linotype or a printing press in a relatively short time. Courses

of less than six-weeks duration are also provided for individuals who already have had some training in this field of work.

Credit

All scheduled courses carry college credit as indicated in connection with the courses. The normal load for a summer term is eight or nine quarter credits.

Brookings

Brookings is a beautiful city with a population of approximately 5,400 located in the east central part of the state on the Chicago and Northwestern railroad. It also has several bus lines leading into it. Its shaded streets and well-kept lawns make it an unusually attractive place in which to spend the summer. Lake Campbell is but a short distance from the city. The Sioux River is a popular picnic point. Nearby golf courses are available for summer recreation. Brookings has a fine municipal swimming pool, and two beautiful city parks with picnic and recreational facilities; including horse shoe, tennis, music concerts, etc.

Lincoln Memorial Library

The Lincoln Memorial Library at South Dakota State College is the heart of the summer school activities. Many of the offices of the various departments are located in the library building and also many of the classes meet there.

The Library itself contains 79,364 (April, 1944) volumes and 27,000 pamphlets carefully selected and well-catalogued to facilitate instruction and individual research and also to stimulate general reading. The library receives currently many newspapers and maintains subscriptions to 565 journals and periodicals of both a technical and general nature. It maintains all the necessary reference books and indexes for both periodicals and documents which make the long files of each valuable in the many fields of research.

The library is also a federal and state document depository and has also been desig-

nated as the new center of war information by the Office of War Information.

Pugsley Union

The Pugsley Union is primarily a student enterprise, operated as the college social, recreational, and service center. It is maintained by and for the students, faculty, and alumni as their college club, with facilities for service and pleasure. Every student, by payment of the specified fee, is an active member of the Union and has a voice in its direction.

During the summer quarter the Union will operate all facilities for which there is a demand. Meal and fountain service will be in operation from 7:30 a.m. throughout the day. Game and recreation facilities will operate when the demand warrants. Lounge, meeting and club facilities will be available at all times. Arrangements for social functions and meetings may be made in the Union Director's office, room 202.

Housing Facilities

Wecota and Wenona Halls have been redecorated and will be available for housing women students during the summer terms. Freshman women under twenty-one years of age, who are not residents of Brookings, are required to live in these dormitories unless special permission to room elsewhere is granted by the Dormitories Committee. Upper-class women may elect to room in the college dormitories or in approved rooming houses in the city. Men students will have no difficulty in securing accommodations in rooming houses near the campus.

The charge for rooming in the college dormitories will be \$8.00 per term. Charges for private rooms will range from \$1.50 to \$2.50 per week. Students wishing to live in the dormitories should provide themselves with a mattress pad, two pairs of pillow cases, three sheets, one pair of blankets, and towels.

Fees Per Term

Tuition*	-----	\$12.00
Library	-----	.50
Health	-----	1.25
Union	-----	1.50
Activity Ticket	-----	2.00
Total		<hr/> \$17.25

* Fifty percent higher tuition for students who are not residents of South Dakota.

Other Expenses

Small laboratory fees are charged for the courses requiring laboratory work. The fee is indicated in each case with the description of the course. A late registration fee of \$2.00 will be collected from all students who complete their registration and pay their fees subsequent to the time announced for that purpose. The cost of books will vary with the course. Used copies may frequently be purchased at reduced cost. Text books and supplies are available at the Union Book Store.

Meals and fountain service are available at the Pugsley Union, as well as at other eating places near the Campus. At the present time the cost of meals at most of these establishments will range between \$5.00 and \$6.00 per week.

Assembly and Recreation

The Summer Quarter social and recreational program is organized to give a maximum of entertainment and relaxation without necessitating excessive travel. Assembly programs, consisting of talks by imported and local speakers, professional entertainments, and performances by State College music organizations, are held each Wednesday afternoon at 1:00 p.m. for the Junior College and at 2:00 p.m. for the Senior College. Activities of a more social nature consist of mixer parties, picnics and dances. These activities are organized by a joint committee of faculty members and students.

Organized recreation for both men and women is provided for under the general

direction of the Physical Education Department. The College is well equipped with tennis courts, ball diamond, golf course, archery equipment, etc. The recently completed municipal swimming pool and several city parks can, by special arrangement with the city authorities, be made available for student use.

Teachers' Employment Bureau

The College maintains a Teachers' Employment Bureau for graduates and students who wish to secure help in locating suitable teaching positions. The Bureau is maintained and operated by the Department of Education and is in charge of a full-time secretary. Complete instructions for registering may be secured at the office of the Bureau at Room 109 Library Building. An annual registration fee of \$1.00 is charged for this service.

There appears to be a shortage of teachers along several high school lines with high school salaries up considerably over those of the last few years. Those who have not taught for a few years, particularly married women, might through summer attendance take refresher work in subject matter courses and education courses and secure teaching certificates. There is an urgent demand for teachers of science and mathematics due, in many cases, to men leaving for the armed service. Many teachers who have basic work in those fields may, through refresher course in such work in summer session, become qualified for very good positions in the field and, in many cases, be assured of a position before they take the work.

Courses Offered

In order to provide ample opportunity for those students who are attempting to complete their college education in the shortest possible time, the College is offering a wide range of courses for the summer sessions. Where there is a sufficient demand additional courses not listed in this bulletin may be offered. The College, in turn, reserves the right to withdraw any courses for

which there is not sufficient demand to warrant the organization of the class.

Courses listed in this bulletin have the same number as those found in the 1942-43 Annual Catalog and are intended to cover the same material. The student is referred to the Annual Catalog in case the abbreviated course description does not provide sufficient information. Further information regarding courses may also be had by writing to the Deans of the Divisions.

In general, the courses listed in these pages are classified as follows: Those numbered 1-19 are of Freshman rank; 20-39 Sophomore rank; 40-59 Junior rank; 60-79 Senior rank; 100-199 undergraduate and graduate rank; 200 or above primarily for graduates. The symbol "P," following the course descriptions, refers to the pre-requisites for the course in question. In cases where the student has unusual qualifications the pre-requisites may be waived.

Division of Agriculture

Agricultural Economics

20 Principles of Economics 5 Cr. 1st Term

The fundamental principles of economic science as an aid to the understanding of the modern economic problems involved in production and distribution.

110 International Trade 3 Cr. 1st Term

Review of theories of international trade and foreign exchange. Basis of interregional exchange; advantages of trade; barriers of trade; P, 20 and junior standing.

Botany—Bacteriology

BOTANY

10ab General Botany 4 Cr. 10a 1st Term 10b 2nd Term

Laboratory fee \$2, deposit \$2 for each course

10ab, Botany of seed plants; a consideration of those problems which plants must solve if they are to develop successfully from seed to maturity; problems of germination, nutrition, growth, adjustment, reproduction and dispersal.

27 The Local Flora 4 Cr. Both Terms

Laboratory fee \$1

Fundamental principles of taxonomy and the identification of plants in the vicinity of Brookings. The chief aim is to develop accuracy and facility in the use of field manuals; P, 10c.

BACTERIOLOGY

41 Elementary Bacteriology 5 Cr. 1st Term

Laboratory fee \$3, deposit \$2

Cultural studies of bacteria, principles of enzyme action, classification of bacterial organisms; P, Chem 21.

142 Principles of Infection and Immunity 5 Cr. 2nd Term

Laboratory fee \$4, deposit \$2

A study of bacterial infection, antibodies, vaccines, blood typing; P, 41.

160 Bacteriological Problems Cr. arranged Both Terms

Laboratory fee \$2 (not collected if work does not require work with laboratory equipment), deposit \$1 per credit hour.

Open only to advanced students.

Entomology—Zoology

20ab General Zoology 4Cr. 20a 1st Term 20b 2nd Term

Laboratory fee \$1, deposit \$1 per term

The fundamental principles of animal morphology, physiology, reproduction, embryonic development, genetics, classification, ecology, geographic distribution, paleontology and evolution.

22 Human Physiology 4 Cr. 1st Term

Laboratory fee \$.50, deposit \$1

The fundamental physiological processes of the human body. Histological slides are used for the study of tissues while anatomical methods

and the organs of the domesticated animals are used for the study of the structure of organs and systems; P, 20ab.

42 Genetics 3 Cr. 2nd Term

A general discussion of genetics, the origin of the germ cell, the germ cell cycle, embryological development as determined by heredity and modified by environment, the cytology of the germ cells, the relation of the chromosome material to genetics, the theory of the gene, linkage, crossing over, non-mendelian inheritance, experimental evolution and related phenomena; P, 20ab.

Rural Sociology

20 Principles of Sociology 5 Cr. 2nd Term

A basic introductory course prerequisite to all other sociological courses numbered above 20. A comprehensive study of society, with an analysis of the forces shaping human behavior in group life.

143 Social Pathology 3 Cr. 1st Term

Conditions and factors which result in individual maladjustment, such as illness, blindness, mental disease, and suicide; in breakdown of domestic relations, such as divorce, widowhood, illegitimacy, and vice; or in failure to cope with social problems such as alcoholism, crime, poverty, unemployment, and war. P, 20. Three recitations a week.

167 Marriage 3 Cr. 2nd Term

The courtship and marriage period is given special emphasis. Mate selection, problems of the unmarried, adjustment in marriage, reproduction, and child training are discussed; P, 20.

168 The Family 3 Cr. 1st Term

Traces the historical development of the family in different parts of the world with the main emphasis on the American family. Consideration is given to the importance of family life, personal relations within the family and social changes affecting it; P, 20.

Division of Engineering

Civil Engineering

142b Engineering Mechanics 4 Cr. Full Quarter

Force systems, resultants, friction, motion, moments of inertia; force, mass and acceleration; work and energy; impulse and momentum. Stress analysis as applied to boilers, beams, column, riveted joints, springs and other structural members. Includes simple stress, combined stresses, deflections, eccentric loading, impact and fatigue; P, Math 27. C.E. 142a.

161b Framed Structures 4 Cr. Full Quarter

Stress analysis, design, detailing, fabrication and erection of structural steel frames and members. Graphical and analytical methods of determining stress and deflections in statically determinate systems. Conventional load systems considered. Complete designs and drawings for representative structures such as roof trusses, railway and highway bridge trusses, and plate girders; P, 142c; C.E. 161a.

163b Reinforced Concrete 2 Cr. Full Quarter

Reinforced concrete beams, columns, footings, foundations, retaining walls, culverts, bridges and buildings are considered as problems in stress analysis, design, and detail. A brief consideration of the methods of analysis of continuous frames; P, 153c; 163a.

172a Principles of Sanitary Engineering 5 Cr. Full Quarter

Principles of development and design of water distribution systems and treatment plant;

rainfall and runoff, sanitary and combined sewage systems and disposal plants, inspection of modern water and sewerage systems. Analysis of public health problems; P, 170, Bact 31.

175 Specifications and Contracts 3 Cr. Full Quarter

Synopsis of the law of contracts. Typical specifications and contracts. P, senior standing in engineering.

177 Engineering Economy 3 Cr. Full Quarter

Methods of estimation of costs of engineering projects. The determination of the most economical arrangement of structural units. The selection of the most economical structural types for given conditions. Problems in the finance of engineering projects; P, Senior standing in Engineering.

179 Highway Engineering 4 Cr. Full Quarter

Laboratory fee \$3.00.

A continuation of Roads and Pavements with emphasis on economic location and design of highways and city streets. The study of traffic control and super-highway projects is included. The laboratory work includes the gathering of field information and its reduction in the office by approved practical methods. P, 50, 52.

Electrical Engineering

143 Direct Current Machinery 4 Cr.

Full Quarter
A study of the construction of direct current generators and motors of the various types, the theories of their operation. For students majoring in electrical engineering. P, 141.

144 a or b Dynamo Laboratory 2 Cr. per term Full Quarter

Laboratory fee \$2.00 each term.
Practical operation of and standard tests on direct current machines, calculations of test results and preparation of engineering reports.

May be taken for one credit each term with less emphasis on report writing by students in Mechanical Engineering. To accompany course, 142 or 143.

161 Alternating Current Circuits 4 Cr.

Full Quarter
Alternating currents, voltages, and power in single-phase and polyphase circuits, use of symbolic notation. P, 141.

169 Dynamo Design 2 Cr. Full Quarter

Computation of principal dimensions and drawing for a direct current machine. P, 143ab.

Mechanical Engineering

3ab Engineering Drawing 2 Cr. Arranged

Development of skill in the use of drawing instruments, and in the mechanics of drafting. Standard practice of lettering, projection, penciling, inking, dimensioning and sectioning of drawing made from geometrical problems, exercises, and machine parts. Open to all students who have had high school mathematics.

142b Thermodynamics 3 Cr. Full Quarter

Fundamental principles underlying the design and operation of the following types of equipment: Steam machinery, internal combustion engines, air machinery, heat transmission, refrigeration, and air conditioning; P, 45, Math 26.

144 Machine Design 5 Cr. Full Quarter

Properties of materials, fundamental mechanics, working stresses, fabrication and proportioning of part sizes involved in the design of fastenings, shafting, fly wheels, gears, bearings, connecting linkages and other machine elements. P, 27, CE 142ab.

161b Engineering Design 2 Cr. Full Quarter

Solution of typical problems involved in the design of steam engines, steam turbines, internal combustion engines and assembly drawings of machines. Some opportunity is given to select a project of interest to the student; P, 142ab, 144.

162b Advanced Mechanical Laboratory 2 Cr. Full Quarter

Laboratory fee \$2
Standard tests and analysis of boilers, steam pumps, condensers, engines and turbines; internal combustion engines, including gas, gasoline, oil, automotive and aviation; tests and determination of characteristics of fans, steam air, and hydraulic flow devices; heating, ventilating, air conditioning, refrigeration and equipment; P, 142ab.

163 Internal Combustion Engines 3 Cr.

Full Quarter
Study of the theory, design and operation of gas, gasoline and oil engines of various types; P, 142ab.

164 Heating, Ventilation and Air Conditioning 4 Cr. Full Quarter

Principles underlying the design of heating, ventilating and air conditioning systems in common use; computation of heat loss and gain in buildings; proportioning of ducts and piping systems for steam and hot water heating; study of apparatus and control systems; P, 45.

165 Power Plant Engineering 4 Cr.

Full Quarter
Design and operation of modern power plants; characteristics and selection of power units and appurtenances; fuel handling and storage; power generation costs in steam and Diesel plants; economics of design and operation. P, 142ab.

Engineering Shop

2 Machine Shop 2 Cr.

Laboratory fee \$3

A study of equipment and tools used in machine shop work, methods of laying out work, elementary principles of machine and bench work, and problems involved in the use of machine tools.

1st Term

5 Elementary Forging and Welding 2 Cr.

Laboratory fee \$3 1st Term
Introductory lectures and exercises in forging, heat treatment, oxy-acetylene and arc welding.

10 Elementary Carpentry 2 Cr. 1st Term

Laboratory fee \$2
Use, care and conditioning of tools. A study of the properties of various kinds of woods and the processing of woods for specific purposes.

Mathematics

10 College Algebra (for General Science students) 5 Cr. 1st Term

A review of the fundamental operations, factoring, highest common divisor, least common multiple and solutions of linear simultaneous equations; study of quadratic equations, exponents, radicals, etc.

11 Trigonometry (for General Science students) 5 Cr. 1st Term

The principles of plane trigonometry and their application to the solution of triangles, inverse functions, solutions of trigonometric equations, De Moivre's theorem. P, 10 or equivalent.

16 Analytic Geometry 5 Cr. 2nd Term

Co-ordinate systems, loci, the straight line,

the general equation of the second degree. P, 14, 15. Required in freshman engineering; elective in general science and agricultural courses.

25 Differential Calculus 5 Cr. 1st Term

Formal differentiation with applications to engineering and science; P, 12 or 16.

26 Integral Calculus 5 Cr. 2nd Term

Formal integration with applications; P, 25.

27 Applied Calculus 5 Cr. 1st Term

Applications of the calculus to maxima and minima, series, areas, surfaces, volumes, centroids, and movements; P, 26.

Physics

1a Elementary Physics 4 Cr. 1st Term

Laboratory fee \$2

Course will cover mechanics and certain phases of heat; P, high school algebra and plane geometry.

1b Elementary Physics 4 Cr. 2nd Term

Laboratory fee \$2

Course will cover electricity and magnetism; P, 1a.

1c Elementary Physics 4 Cr. 2nd Term

Laboratory fee \$2

Course will cover heat, light, and sound. P, 1a.

131ab Advanced General Physics

3 Cr. each term

131a 1st Term, 131b 2nd Term

Second year work in general physics. P, 1c or 21c, Math 26.

Division of Home Economics

Home Economics

30 Clothing 3 Cr. 1st Term

Laboratory fee \$1

Development of the foundation pattern, flat pattern construction, and the selection and construction of a garment. Emphasis on selection of design and color to express individual personality; P, 11a.

72 Home Management House 4 Cr. 1st Term

Six weeks residence in the home management house with actual experience in problems that arise in the management of a home.

144 Advanced Clothing 3 Cr. 1st Term

Laboratory fee \$1

Application of principles of costume design to promote more independence, initiative, originality and art in planning and adapting garments for different types of figures. Laboratory practice to include remodeling for a child and the construction of a dress; P, 30.

146 Methods of Teaching Clothing 3 Cr. 1st Term

Analysis of problems; making of illustrative

material for clothing courses.

160 Experimental Cookery 3 Cr. 1st Term

Laboratory fee \$4

Investigation of factors which affect a standard food product by laboratory experiments and a review of the literature on research in cookery.

166 Textile Economics 3 Cr. 1st Term

A study of the economic aspects of clothing which directly or indirectly affects the consumer; P, Ag Econ 20.

174-175 The House 3 Cr. 1st Term

Planning and furnishing of a medium-priced home from the standpoint of economy, convenience, comfort, and beauty. (Combination of House Planning and Home Furnishing.)

264 Nutrition Seminar 2 Cr. 1st Term

Assigned readings and discussions of topics in the field of foods and nutrition with special attention to recent literature bearing on problems in dietetics in both normal and pathological conditions; P, 140, 141.

Division of Pharmacy

Nursing Education

Entering Nursing Education students will take chemistry 1a and English 1a the first quarter and chemistry 1b and English 1b the second quarter.

Advanced students in Nursing Education will receive their practical training at Sioux Valley Hospital, Sioux Falls, South Dakota.

Pharmacy

Entering pharmacy students will take chemistry 1a and English 1a the first quarter and chemistry 1b and English 1b the second quarter.

46 Window Display 2 Cr. 2nd Term
Laboratory fee \$2, deposit \$3

The work in window display is made up of a combination study of color schemes, and arrangements of material used in display. Lighting effects will also be given careful consideration.

60ab Dispensing 4 Cr. each term
60a 1st Term; 60b 2nd Term
Laboratory fee \$3, deposit \$3 each term

This course is designed to acquaint the student with the actual work that comes before him in the store, and give him the practical side of the work. P, all courses of Theoretical and Practical Pharmacy. Two recitations and six hours of laboratory work a week. Text: Scoville's Art of Compounding.

62ab Pharmacology 4 Cr. each term
62a 1st Term, 62b 2nd Term
Laboratory fee \$3, deposit \$3 each term

The course in Pharmacology is designed to embrace a knowledge of the action of the more important drugs and preparations dispensed by the pharmacist. A careful study of the dose, therapeutic action and mode of administration comprises the major portion of the course. Laboratory work consists of biologic assays and antidotal treatment of common poisons; P, 23abc.

143a Toxicology 2 Cr. 1st Term

An introduction to the study of the nature, effects and antidotes of poisons as well as their classification. P, junior standing. Text and references: McNally's Toxicology; Authenrieth's Detection of Poisons; and Sollman's Manual of Pharmacology. Primarily for students electing one term's work in the field.

Division of General Science

Art

1abc* 2 Cr. per term Both Terms
Laboratory fee \$.50 per term

A foundation course intended to serve as a basic prerequisite for all other art work.

*Course a or b or c offered each term depending upon demand.

2 Frechand Drawing 1 or 2 Cr.† Both Terms
Laboratory fee \$.50 per term

A study of the principles of perspective. Exercises in outline and value from cast, nature forms and still life. Interpretative compositions.

25 Applied Design 2 Cr.† 1st Term
Laboratory fee \$.50

The designing and execution of various problems involving the definite use of materials, tools and processes, will be used to further the understanding of design through actual application and execution; P, 1abc.

26 Crafts 1 or 2 Cr.† Both Terms
Laboratory fee \$.50 per term

A study of the principles of design as applied to construction and decoration in the various crafts of pottery, basketry, weaving, wood carv-

ing, stenciling, block-printing, needlecraft, etc.; P, 1abc.

40 Painting 1-2 Cr. per term 1st Term
Laboratory fee \$.50 per term

A study of color and its properties. Exercises in mixing and harmonizing color in painting, in oil, water color, or pastel. Emphasis is given to problems of composition. P, 3 credits in Frechand Drawing.

42 Advanced Art Appreciation 1 Cr. Both Terms

A study, somewhat in detail, of the art of a particular period to be selected by the group; P, 27.

Special Craft and Design 1 or 2 Cr.† Both Terms

Laboratory fee \$.50 per term
Intended for those who have had no previous work in Design but who would like to do some work in the crafts. The problems are adjusted to the group.

† Three periods of laboratory work for each credit.

Chemistry

1ab Inorganic Chemistry 4 Cr. 1a 1st Term
1b 2nd Term

Laboratory fee \$3, deposit \$3 per term

A general survey of the field of inorganic chemistry, with emphasis on chemical laws and theories and non-metallic elements.

22ab Elementary Organic Chemistry 4 Cr.

22a 1st Term; 22b 2nd Term

Laboratory fee \$6.00; deposit \$5.00 a term.

A general course in organic chemistry to meet the requirements of the pharmacy division. P, 1c.

23 Gravimetric Analysis 4 Cr. 1st Term

Laboratory fee \$5, deposit \$4

Theory and practice of elementary gravimetric analysis; P, 1c.

24 Volumetric Analysis 4 Cr. 2nd Term

Laboratory fee \$5, deposit \$4

Theory and practice of elementary volumetric analysis; P, 1c.

28ab Stoichiometry 1 Cr. 28a 1st Term
28b 2nd Term

A study of the methods of calculations used

in quantitative analysis. Should accompany courses 23 and 24; P, 1c.

163abc Physical Chemistry 12 Cr.

Full Quarter

Laboratory fee \$10, deposit \$10 per quarter.

An introductory course in physical chemistry; P, 21, 23, 24, Math 27, Physics 21c.

173 Undergraduate Research Cr. arranged

Both Terms

Laboratory fee \$1, deposit \$1 per credit hour.

Special problems requiring original research; P, consent of instructor.

174 Biochemical Research Cr. arranged

Both Terms

Laboratory fee \$1, deposit \$1 per credit hour.

Research problems in applied biochemistry; P, consent of instructor.

190ab Seminar 1 Cr.

190a 1st Term

190b 2nd Term

Presentation of topics based on reference reading and original research; P, Minor in Chemistry.

Education and Psychology

Psy 25 Elementary Psychology 3 Cr. 1st Term

Laboratory fee \$1.

An introduction to the fundamental principles of human behavior, with a laboratory study of one's own abilities and traits of personality. P, sophomore standing.

45 Educational Psychology 3 Cr. 1st Term

Nature of learning curves, economic learning, rates and limits of improvement, the retention of experience, differences in learning capacity, transference and interference. Required for certification; P, Psy 25.

47 Methods of Teaching in High School

3 Cr. 2nd Term

A general methods course. Deals with standard and newer classroom procedures. Required for certification; P, 40, 45.

160 Public School Administration 3 Cr.

1st Term

Organization and administration of the school system in the state, county, and various types of local school districts. Work and responsibilities of the State Department of Public Instruction, the County Superintendent, the public, school boards and superintendents and principals. P, 40, 45, 47.

163 High School Administration 3 Cr.

1st Term

Study of high school problems; programs of

work, the schedule, extra-curricular activities, guidance, etc. For teachers and administrators. P, 40, 45, 47.

220* Organization and Administration of Elementary Education 3 Cr. 1st Term

Deals with the problems of the superintendent in organizing and administering the work of the elementary school; P, senior or graduate in Education.

260 Principles of Supervision 3 Cr. 2nd Term

Problems in the scientific supervision of teaching; the planning and organization of supervision; study of supervisory function; classroom visitation and conference; improvements of teacher in service; rating of teachers; evaluation of supervision; P, senior or graduate in Education.

262* Business Administration of Schools

3 Cr. 1st Term

Business aspects of public school administration including such problems as organization of the work of the school board, budgetary procedure, financial accounting, building plans, equipment and supplies, janitor service, school finances. P, 160, graduate standing.

285 Thesis

Both Terms

* One but not both will be offered.

English

1a English Composition 3 Cr. 1st Term

First term of course required of all freshmen.

1b English Composition 3 Cr. 2nd Term

Second term of the course required of all freshmen.

20 Introduction to Literature 3 Cr. 1st Term

A study of the principal literary types—fiction, drama, essay, biography, and poetry; P, 1abc.

30c English Literature 3 Cr. 1st Term

Third quarter of the English Literature sequence covering the modern period. Required of English minors. P, 20.

Types Course: 3 Cr. 2nd Term

Either Fiction or Poetry, depending upon the demand. P, 20.

102 Social Ideals 3 Cr. 2nd Term

A study of the literature of the last two centuries with emphasis on such concepts as liberty, democracy, and totalitarianism. The course is designed to give a background for understanding the present clash of ideologies. Credit in this course may be counted toward a major or minor in history; P, consent of the instructor.

Foreign Languages

Instruction in French, German, Italian, Portuguese, and Spanish will be offered if there is sufficient demand. Anyone interested in study-

ing these languages should consult with the head of the Language Department.

History and Political Science**23ab The American Nation 4 Cr.**

23a 1st Term; 23b 2nd Term

Standard courses in American history. Special emphasis upon political development and constitutional growth. 23a, 1783 to 1850; 23b, 1850 to end of the century; P, sophomore standing.

34 American Government 4 Cr. 1st Term

The National government; genesis of American federalism; the Constitution, its formation, principles, and development; party organization and activities; the President as chief executive; the Cabinet, growth of executive influence; departments; independent establishments and their reorganization; Congress, structure, organization and procedure; the national judiciary; national finance; federal centralization; P, Sophomore standing.

NOTE: English 102 may be applied toward a history major.

44 State and Local Government 4 Cr. 2nd Term

The State and the Nation; constitutional basis of state government; organization, functions, and popular control; rapid survey of county, city, and township organization. Emphasis upon South Dakota constitution and government; P, Sophomore standing.

142b Contemporary Europe 4 Cr. 1st Term

Europe between two wars. A study of the nineteen twenties, the period of settlement, and the thirties, the period of crisis culminating in the Second World War. A political, diplomatic, and economic survey of post-war Europe including studies of Bolshevism, Fascism, Nazism, present day dictatorships and important world conferences; P, Junior standing and one year of college history.

Library Study**60a Library Administration 2 Cr. 1st Term**

A general course stating the problem of school libraries. Objectives and methods of service in the small high school libraries, organization, budget and ordering, classification and cataloguing, student library club, housing and equipment, records to be kept, reports to make, and methods of publicity.

60b Book Selection and Reference 2 Cr. 2nd Term

Standards of criteria which may be used in appraising books for school libraries.

60c Cataloguing and Classification 2 Cr. 1st Term

This course is to teach students how to catalogue and classify books for high school libraries.

Military

Courses in Military Science and Tactics will be offered in accordance with the demand for

such training.

Music

The Summer term provides opportunity for study in piano, pipe organ, voice, and wind or stringed instruments. Individual instruction will also be given in sight reading and ear training, choral techniques and interpretation, conducting (Band, Orchestra, or Choral), orchestration and harmony. All members of the staff will be available for individual lessons. Credit may be earned toward a minor in music.

A summer school chorus will be organized by Mr. Theman and a symphony orchestra and a band will be organized by Mr. Christensen if organization permits. Students in choral and instrumental conducting will be given an opportunity to direct these groups.

Fees per Term

One individual lesson per week	\$ 6.00
Two individual lessons per week	\$12.00

Physical Education and Recreation

MEN

1a,b,or c Physical Education I 1 Cr.

Both Terms
Laboratory fee, including towel service, use of equipment, etc. \$1.50
Required of all freshmen. Emphasis on physical fitness.

20a, b, or c Physical Education II 1 Cr.

Both Terms
Required of all sophomores.
Laboratory fee, including towel service, use of equipment, etc., \$1.50

61 Organization & Admin. of Phys. Ed. 2 Cr.

1st Term
Aims and objectives of physical education. Equipment, supplies and program planning.

Sp Swimming 1 Cr.

Both Terms

WOMEN

1a, b or c Physical Education 1 Cr.

Both Terms
Laboratory fee, including towel service, use of equipment, etc., \$1.50
Required of all freshmen.

20a, b, or c Physical Education 1 Cr.

Both Terms
Laboratory fee, including towel service, use of equipment, etc., \$1.50. Required of all sophomores.

40 Physical Education 1 Cr.

Both Terms
Laboratory fee, including towel service, use of equipment, etc., \$1.50

Theory and practice of organized play.

61 Organization & Admin. of Phys. Educ.

2 Cr. 1st Term
Aims and objectives of physical education. Equipment, supplies and program planning.

Sp Swimming 1 Cr.

Both Terms

Printing and Rural Journalism

16a Typewriting 1 Cr.

Both Terms

Laboratory fee \$1 per term
Graded exercises to learn "touch method" are first given. Care of machines; correspondence and various forms; billing and tabulating; manifolding and mimeographing.

18ab Beginning Shorthand 5 Cr.

18a 1st Term; 18b 2nd Term

The Gregg system is taught. Complete theory. Some dictation.

19ab Advanced Shorthand 5 Cr.

19a 1st Term; 19b 2nd Term

An intensive review of shorthand with spe-

cial emphasis on dictation and development of speed; P, 18abc.

24 Newswriting 3 Cr.

1st Term

The beginning course in journalism. Includes a study of news sources and news values; actual practice in gathering and writing news is emphasized; P, English 1abc.

51 Feature Writing 3 Cr.

2nd Term

A course covering the writing of news features and special feature articles; particular emphasis placed on methods of popularizing scientific material; P, 24.

Printing

Shop Course for Printers

Both Terms

Special shop courses are offered during the summer session in presswork, typography, and composing machines for men and women of the printing trades who wish to develop their skill in the various shop phases of printing. No entrance requirement is necessary other than previous experience in one of the printing trades. Tuition and laboratory fee \$5.00 per week.

Typography

Both Terms

Laboratory fee \$1.50 per unit*
Principles of typography are given to beginning students, including all the elements of

hand composition.

Composing Machines

Both Terms

Laboratory fee \$2.50 per unit*

The course in composing machines includes practice and study in the repair and mechanical adjustments of all the composing machines including both Linotype and Intertype.

Press Work

Both Terms

Laboratory fee \$2 per unit

The student may take either platen presswork or cylinder presswork, or both.

* Six hours per week for each unit.

Speech

14a Dramatic Production 2 Cr.

1st Term

This course aims at giving an understanding of, and practice in, dramatic activity, theory and directing experience gained by producing a one act play, production experience, instruction in elements of stagecraft and lighting; and practice in theatrical make-up.

22 Extempore Speaking 3 Cr.

Both Terms

This course, required for graduation, may be taken during any term of the year. To assist the

student in acquiring an effective oral style—simple, clear, direct. Attention to the selection, organization and presentation of material; P, Eng 1abc.

43 Public Address; Practical Persuasive Speech

2 Cr. 2nd Term

The various forms of public address and public discussion. The purpose here is to determine the elements of persuasive speech and to provide a variety of individual experience. Original work by members of the class; P, 22.

South Dakota State College
of Agriculture Mechanic Arts

Bulletin

